

Checklists for Grading Projects

1. Download the checklist from the SDDOT downloadable files web page to the **documents** folder for your project.
2. Open the checklist in Bluebeam Revu.

Project Checklist

1. Input the PCN
 - Select the form field for PCN
 - Fill in the appropriate number. This will add the PCN to all pages.
2. Input dates in checklist
 - Select the form field for date
 - Fill in the appropriate dates in the form field.

Plans Checklist & Design Checklist

For each project milestone, select the checkbox for each completed item.

To add a comment to an incomplete item:

- Execute the Bluebeam Highlight markup tool
- Highlight the appropriate milestone in the incomplete item
- Stop the Bluebeam highlight markup tool
- Double click the highlight
- Type the comment in the comment box

To mark an incomplete item as completed; right click the highlight and select **Set Status > Completed**

Items not applicable to the project will be crossed out using the Bluebeam Strikethrough markup tool.

(Reference

https://dot.sd.gov/media/documents/SDDOT_BluebeamRevuManual_November2016.pdf for guidance using the Bluebeam *Highlight* and *Strikethrough* markup tools and settings)

PROJECT CHECKLIST

PCN

The following table is a comprehensive list of items. Not all items will apply to all projects. Record dates only for those items that are completed for the project.

ACTIVITY (Milestones in Bold)	Date Completed
1. Review Scope	_____
2. Develop Strip Map and request Land Ownership information from Right of Way Office	_____
3. Receive Traffic Analysis Recommendations from Road Design Traffic Squad	_____
4. Receive notice that topo survey is complete and tPCN#?.dgn is ready for use	_____
5. Conduct Pre-Design Inspection	_____
6. Receive Land Ownership information from Right of Way Office	_____
7. Receive notice that land tie survey is complete and PCN#lt.dgn is ready for use	_____
8. Establish Existing ROW	_____
9. Receive Surfacing Recommendations from Materials and Surfacing	_____
10. Send Preliminary Gradeline to Railroads and/or Aeronautics	_____
11. Send Preliminary Gradeline to Access Mgmt Engr, Bridge Design and Geotechnical Activity	_____
12. Request Preliminary Traffic Control from Region / Area Office	_____
13. Receive Preliminary Drainage Data from Hydraulics staff	_____
14. Receive Preliminary Highway Access Evaluation	_____
15. Receive Preliminary Soils Letter from Geotechnical Activity	_____
16. Receive Preliminary Geology Letter from Geotechnical Activity	_____
17. Request Design Check	_____
18. Schedule Preliminary Design Inspection	_____
19. Receive Final Drainage Data from Hydraulics staff	_____
20. Conduct Preliminary Design Inspection and Provide Summary Letter	_____
21. Attend meeting w/Landowners to discuss access changes determined during PDI	_____
22. Receive Revised Highway Access Evaluation	_____
23. Perform Preliminary Design Inspection and Access Management Revisions	_____
24. Conduct Public Meeting	_____
25. Send Public Meeting Summary	_____
26. Request Certificates of Title from Right of Way Office (90 days prior to Landowner Mtgs)	_____
27. Perform Public Meeting Revisions	_____
28. Send Final Gradeline to Access Mgmt Engr, Bridge Design and Geotechnical Activity	_____
29. Receive Preliminary Bridge Layouts	_____
30. Request Preliminary Borrow	_____
31. Receive Certificates of Title from Right of Way Office	_____
32. Receive Deck Drainage Recommendations	_____
33. Receive Final Soils Recommendations from Geotechnical Activity	_____
34. Receive Final Geology Recommendations from Geotechnical Activity	_____
35. Schedule Landowner Meeting	_____
36. Conduct Landowner Meeting	_____
37. Receive Final Highway Access Evaluation	_____
38. Perform Final Design from Landowner Meeting Revisions	_____
39. Send Landowner Letter with Notes	_____
40. Request Design Check	_____
41. Schedule Final Design Inspection	_____
42. Request Updated Certificates of Title from Right of Way Office	_____
43. Conduct Final Design Inspection and Provide Summary Letter	_____
44. Request Maintenance & Encroachment / Combined Letting / Financial Agreement	_____
45. Attend meeting with Upper Mgmt to determine decision on unresolved access issues	_____
46. Perform Final Design Inspection Revisions	_____
47. Send Updated Final Gradeline to Bridge Design and Geotechnical Office	_____
48. Request Final Borrow	_____
49. Receive Borrow Recommendations	_____
50. Receive Updated Certificates of Title by Right of Way Office	_____
51. Complete ROW Plats/Plans (includes Land Surveyor review and revisions)	_____
52. Send Plans/Plats for Final ROW Review	_____
53. Send Plans/Plats to ROW, Utility Coordinator and Access Management Engineer	_____
54. Attend meeting with Upper Mgmt to determine final action on non-Landowner supported Access Mgmt	_____
55. Request Final Design Check	_____
56. Request / Receive Final Plans	_____
57. Prepare Special Provision Checklist	_____
58. Send Final Plans for DOT/FHWA Review	_____
59. Receive Review Comments	_____
60. Respond to DOT/FHWA Comments	_____
61. Revise Final Plans and Special Provision Checklist	_____
62. Conduct Road Design QC/QA Review	_____
63. Send Plans to Bid Letting	_____

PLANS CHECKLIST

PCN

The following checklist should be completed prior to submitting the Preliminary Gradeline (PG) and scheduling the Preliminary Design Inspection (PDI), Public Meeting (PM), Landowner Meeting (LO) and Final Design Inspection (FDI).

CONSTRUCTION PLANS

Title Sheet

Project Number.....	PG	PDI	PM	LO	FDI
Type of Project	PG	PDI	PM	LO	FDI
Location Map	PG	PDI	PM	LO	FDI
Begin and End of Project Limits	PG	PDI	PM	LO	FDI
"Not For Construction" Background	PG	PDI	PM	LO	FDI

Typical Sections

Per Roadway	PG	PDI	PM	LO	FDI
"Not For Construction" Background	PG	PDI	PM	LO	FDI

Plan Sheets

Horizontal Alignment Data.....	PG	PDI	PM	LO	FDI
Cut and Fill Limits Drawn.....	PG	PDI	PM	LO	FDI
Take Out Notes (Pipe only for PG)	PG	PDI	PM	LO	FDI
Entrances Drawn.....	PG ¹	PDI	PM	LO	FDI
Pipe Sizes & Locations (Include Length for FDI).....		PDI	PM	LO	FDI
Drop Inlet Types & Locations		PDI	PM	LO	FDI
Structure and Box Culvert Size & Locations				LO	FDI
Curb & Gutter and Sidewalk Locations	PG	PDI	PM	LO	FDI
Drainage Arrows Drawn		PDI	PM	LO	FDI
Existing and Proposed ROW	PG ²	PDI	PM	LO	FDI
Drawn and Dimensioned					
ROW Data Labeled	PG	PDI	PM	LO	FDI
(Sec. Lines, 1/4 Lines, Sec.-T-R, etc.)					
Widening provided for additional lanes.....	PG	PDI	PM	LO	FDI
Diversions		PDI ³	PM ³	LO	FDI
Landowner Information (If available show for PDI)		PDI	PM	LO	FDI
Temporary Easements Shapes, Notes and Annotation					FDI
Fence Drawn and Labeled					FDI
Other Plan Notes needed (Guardrail, etc.)					FDI
"Not For Construction" Background	PG	PDI	PM	LO	FDI

- 1 Access Management Engineers will evaluate and provide preliminary access management recommendations following Send Preliminary Gradeline. Show new entrances at all existing entrance locations.
- 2 Proposed ROW may be graphical representation of corridor only for Send Preliminary Gradeline. Additional ROW needs and details are developed after Send Preliminary Gradeline.
- 3 If known. If not known, but in a sensitive area, develop a conceptual diversion design.

PLANS CHECKLIST (continued)

PCN

Profile Sheets

Vertical Curve Data (with K values)	PG	PDI	PM	LO	FDI
Grades	PG	PDI	PM	LO	FDI
Entrances Size and Location Labeled	PG	PDI	PM	LO	FDI
Elevations Drawn at each Station Interval	PG	PDI	PM	LO	FDI
Special Ditch Grade, PI Station and Elevations					FDI
Mainline Pipe (or Storm Sewer) and Drop Inlets Drawn and Labeled					FDI
Structure and Box Culvert Drawn with Inlet and Outlet Elevations					FDI
Hydraulic Data and Overtopping Data					FDI
"Not For Construction" Background	PG	PDI	PM	LO	FDI

Cross Sections

Curb & Gutter Sections Drawn (Label Top of Curb Elev. for FDI)		PDI	PM	LO	FDI
Elevations Label at Key Locations	PG	PDI	PM	LO	FDI
Entrances Drawn and Labeled		PDI	PM	LO	FDI
Special Ditch PI Station and Elevations					FDI
Final Drop Inlet Types and Locations with Storm Sewer					FDI
Final Pipe Sizes and Locations					FDI
"Not For Construction" Background	PG	PDI	PM	LO	FDI

ROW PLANS / DISPLAYS

¹ Horizontal Alignment		PM	LO	FDI
¹ Existing and Proposed ROW Drawn and Dimensioned		PM	LO	FDI
¹ ROW Data Labeled (Street Names, Sec. Lines, Sec. T & R, etc.)		PM	LO	FDI
¹ Landowner Information (If available show for PDI & PM)		PM	LO	FDI
Temporary Easements Shapes, Notes and Annotation				FDI
Curb & Gutter and Sidewalk Locations		PM	LO	FDI
Cut and Fill Limits Drawn		PM	LO	FDI
Entrances Drawn		PM	LO	FDI
Edge of Shoulder (outside edge)		PM	LO	FDI
Detours & Diversions		PM ²	LO	FDI
Lanes (i.e. If other than 2 lanes - turn lanes, climbing lanes, etc.)		PM		
Pavement Markings – Only on Displays		PM		
Boulevards (grass or colored concrete) – Only on Displays		PM		
"SIDEWALK" Labels – Only on Displays		PM		
"Preliminary" Background		PM	LO	FDI

- 1 The information needed for a Public Meeting is based on this meeting being conducted after a Preliminary Design Inspection. If a Public Meeting is conducted prior to design being started only this information required at the Public Meeting.
- 2 Diversion if known. If not known, but in a sensitive area, develop a conceptual diversion design.

OTHER CHECKLIST

PCN

ITEMS or INFORMATION NEEDED AT INSPECTIONS

Project Schedule	PDI	PM	LO	FDI
List of unanswered questions and/or discussion items	PDI	PM	LO	FDI
ROW plans			LO	FDI
Scale, Calculator, Note Pad	PDI	PM	LO	FDI
Camera, Tape Measure, Safety Vests..... and Flashing Light for atop vehicle	PDI			FDI
Road Design Inspection Checklist.....	PDI			FDI
ROW Certificates and Landowner Meeting Forms.....			LO	
Earthwork Balance Locations				FDI

A design check is necessary to make sure design criteria is met and computer design files match the typical section, plan/profile sheets and cross sections.

The 10 geometric elements established by FHWA as controlling factors during design are as follows. The desire or need for a design exception will typically be determined during the scoping process. If during review of design, any of the 10 controlling factors are not met and a design exception has not already been approved, the design shall be updated to meet the controlling criteria or a design exception shall be provided with proper justification as outlined in Chapter 2 – Scope Process and Project Management, of the Road Design Manual. The criteria highlighted are part of the Design Checklist on the following pages.

- | | |
|----------------------------|--|
| 1. Design Speed | 6. Maximum Grade |
| 2. Lane Width | 7. Stopping Sight Distance (SSD) |
| 3. Shoulder Width | 8. Cross Slope |
| 4. Horizontal Curve Radius | 9. Vertical Clearance |
| 5. Superelevation Rate | 10. Design Loading Structural Capacity |

Design Checks will be requested, and the following checklist will be completed prior to scheduling the Preliminary Design Inspection (PDI) and prior to scheduling the Final Design Inspection (FDI). Another design check will be requested prior to sending final plans for DOT/FHWA review (DOT Review).

When a design element is not part of the project design the reviewer will cross-out that item. The reviewer will check the PDI and FDI boxes noting each element of design has been reviewed when that element is part of a project. As needed the reviewer will provide written comments on the Design Checklist with respect to the design criteria. Communication between the designer and reviewer is essential to ensure a quality design and plans are provided. For those elements that don't meet criteria, appropriate justification will be provided in the project file and/or a design exception requested for approval if the design element is one of the 10 controlling factors listed.

DESIGN CHECKLIST

PCN

HORIZONTAL ALIGNMENT

Curve radii meet Design Speed.....	PDI	FDI	DOT Review
Design Exception Not Needed Approved			
15-minute Deflection Guideline	PDI	FDI	DOT Review
Superelevation: Rate and Transition Length	PDI	FDI	DOT Review
Design Exception Not Needed Approved			
Minimum Length of Curves.....	PDI	FDI	DOT Review

VERTICAL ALIGNMENT

K Factors & Stopping/Passing Sight Distance.....	PDI	FDI	DOT Review
Design Exception Not Needed Approved			
Maximum Grades	PDI	FDI	DOT Review
Design Exception Not Needed Approved			
Minimum Grades for Urban	PDI	FDI	DOT Review
(Drainage Concerns)			
Minimum Grades for Rural	PDI	FDI	DOT Review
(Superelevation Transition Concerns)			
Meets Vertical Clearance Requirement.....	PDI	FDI	DOT Review
(Structure, Utilities)			
Design Exception Not Needed Approved			
Ditch Grades.....		FDI	DOT Review
Special Ditches.....		FDI	DOT Review

DRAINAGE (RURAL)

Does Drainage Area and existing pipe size vs. proposed pipe size seem reasonable?	PDI		
Pipe eliminated: Check where the drainage used to go vs. where it is going now	PDI		
Can the needed Head be obtained for the pipe designed?	PDI		
Drainage arrows (compare existing versus proposed)	PDI		
Review computer input/output	PDI		
(Design Discharge & Structure size)			
Ditch Block Elevations (required Head)		FDI	DOT Review
Correct Class/Gauge of pipe		FDI	DOT Review
Gabion Need (10fps).....		FDI	DOT Review
36" & Greater extended to Clear Zone		FDI	DOT Review
Proper End Treatments		FDI	DOT Review
Possible Erosion Areas (cut sections to high fills, downspouts, etc.)		FDI	DOT Review

DRAINAGE (URBAN)

Drop Inlet locations (assuming Q is correct, verify the spread)	PDI		
Sag Vertical Curves (Low enough K for drainage purposes)	PDI		
Drop Inlet/Junction Box Elevations.....		FDI	DOT Review
Manhole/Drop Inlet large enough for pipe sizes.....		FDI	DOT Review
Behind curb drainage: Are we creating any pond areas?		FDI	DOT Review
General Storm Sewer review (drop inlet locations-low point check..... spread, pipe size, grades, cover)		FDI	DOT Review

DESIGN CHECKLIST (continued)

PCN

TYPICAL SECTION

Driving Lane (width)	PDI	FDI	DOT Review
Design Exception Not Needed Approved			
Cross Slope	PDI	FDI	DOT Review
Design Exception Not Needed Approved			
Shoulder (width)	PDI	FDI	DOT Review
Design Exception Not Needed Approved			
Sluff	PDI	FDI	DOT Review
Inslopes	PDI	FDI	DOT Review
Backslopes	PDI	FDI	DOT Review
Transition Lengths.....	PDI	FDI	DOT Review
Check Clearzone	PDI	FDI	DOT Review
Fence Berm		FDI	DOT Review
Guardrail Widening coded in		FDI	DOT Review
Other Miscellaneous Widening (ex. Historic Marker) coded in.....		FDI	DOT Review
Additional Lanes		FDI	DOT Review
Undercut Depth coded in.....		FDI	DOT Review
Does Urban have the correct C&G and Surfacing height coded in?		FDI	DOT Review

INTERSECTIONS

Truck Turning Movements	PDI	FDI	DOT Review
Intersection Sight Distance	PDI	FDI	DOT Review
(combination of horizontal, vertical, & obstructions - including signal cabinets)			

GUARDRAIL

Length of need correct		FDI	DOT Review
Check overall design		FDI	DOT Review

ADA

Ramp locations	PDI	FDI	DOT Review
Sidewalk slopes	PDI	FDI	DOT Review
Landings, turning spaces, clear spaces & ped push button locations	PDI	FDI	DOT Review

EARTHWORK

Assumed Shrinkage Factor coded in.....	PDI		
Assumed Salvage/ Concrete Pavement removal coded in	PDI		
Shrink Factor check		FDI	DOT Review
Muck/Unstable coded in		FDI	DOT Review
Salvage/Concrete Pavement removal coded in		FDI	DOT Review
Are all added quantities coded in included in the earthwork report?		FDI	DOT Review
Phasing considerations		FDI	DOT Review

DESIGN CHECKLIST (continued)

PCN

TYPICAL SECTION

Driving Lane (width)	PDI	FDI	DOT Review
Design Exception Not Needed Approved			
Cross Slope	PDI	FDI	DOT Review
Design Exception Not Needed Approved			
Shoulder (width)	PDI	FDI	DOT Review
Design Exception Not Needed Approved			
Sluff	PDI	FDI	DOT Review
Inslopes	PDI	FDI	DOT Review
Backslopes	PDI	FDI	DOT Review
Transition Lengths.....	PDI	FDI	DOT Review
Check Clearzone	PDI	FDI	DOT Review
Fence Berm		FDI	DOT Review
Guardrail Widening coded in		FDI	DOT Review
Other Miscellaneous Widening (ex. Historic Marker) coded in.....		FDI	DOT Review
Additional Lanes		FDI	DOT Review
Undercut Depth coded in.....		FDI	DOT Review
Does Urban have the correct C&G and Surfacing height coded in?		FDI	DOT Review

INTERSECTIONS

Truck Turning Movements	PDI	FDI	DOT Review
Intersection Sight Distance	PDI	FDI	DOT Review
(combination of horizontal, vertical, & obstructions)			

GUARDRAIL

Length of need correct		FDI	DOT Review
Check overall design		FDI	DOT Review

ADA

Ramp locations	PDI	FDI	DOT Review
Sidewalk slopes	PDI	FDI	DOT Review
Landings, turning spaces, clear spaces & ped push button locations	PDI	FDI	DOT Review

EARTHWORK

Assumed Shrinkage Factor coded in.....	PDI		
Assumed Salvage/ Concrete Pavement removal coded in	PDI		
Shrink Factor check		FDI	DOT Review
Muck/Unstable coded in		FDI	DOT Review
Salvage/Concrete Pavement removal coded in		FDI	DOT Review
Are all added quantities coded in included in the earthwork report?		FDI	DOT Review
Phasing considerations		FDI	DOT Review